

Application Serial No. 10/581,182
Response to Office Action dated September 10, 2009

PATENT
Docket: CU-4848

Amendments to the Claims

The listing of claims presented below replaces all prior versions, and listings, of claims in the application.

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The Applicant wishes to make the following amendments to the claims of the above patent application:

Listing of claims

1-28. (Cancelled.)

29. (new) An artificial corundum crystal having at least one crystal face selected from a group consisting of a (113) face, a (012) face, a (104) face, a (110) face, a (101) face, a (116) face, a (211) face, a (122) face, a (214) face, a (100) face, a (125) face, a (223) face, a (131) face, and a (312) face,
wherein a coloring component is added into the artificial corundum crystal,
wherein an aluminum compound raw material which is a basic component of the artificial corundum crystal is an aluminum oxide,
wherein a raw material of the coloring component is an oxide of the coloring component,
wherein an adding amount of the oxide of the coloring component is 1% or less by weight to a weight of the aluminum oxide, and
wherein the coloring component is an iron and a titanium, a nickel, a vanadium, or a cobalt.

30. (new) An artificial corundum crystal having a dominant crystal face other than a (001) face,
wherein a coloring component is added into the artificial corundum crystal,
wherein an aluminum compound raw material which is a basic component of the artificial corundum crystal is an aluminum oxide,
wherein a raw material of the coloring component is an oxide of coloring component,

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wherein an adding amount of the oxide of the coloring component is 1% or less by weight to a weight of the aluminum oxide, and

wherein the coloring component is an iron and a titanium, a nickel, a vanadium, or a cobalt.

31. (new) The artificial corundum crystal according to claim 29, which is derived from a crystal having a hexagonally dipyramidal shape.

32. The artificial corundum crystal according to claim 30, which is derived from a crystal having a hexagonally dipyramidal shape.

33. (new) A process for producing an artificial corundum crystal,
wherein an artificial corundum crystal having a hexagonally dipyramidal shape as its base shape is produced by a flux evaporation method of heating a sample containing a raw material and a flux to precipitate a crystal and grow the crystal by use of a flux evaporation as a driving force,
wherein the flux contains an evaporation inhibitor,
wherein the evaporation inhibitor is an alkali metal compound, and
wherein the alkali metal compound is a compound which is heated to generate at least one kind of alkali metal oxide selected from a group consisting of Li_2O , Na_2O , and K_2O .

34. (new) The process for producing an artificial corundum crystal according to claim 33, wherein the flux contains a molybdenum compound.

35. (new) The process for producing an artificial corundum crystal according to claim 34, wherein the molybdenum compound is a molybdenum oxide or a compound which is heated to generate the molybdenum oxide.

36. (new) The process for producing an artificial corundum crystal according to claim 33, wherein a mol number of an alkali metal atom in the alkali metal compound is 40% or less by mol of total mol numbers of the sample.

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37. (new) The process for producing an artificial corundum crystal according to claim 33, wherein a mol number of the raw material is 10% or less by mol of total mol numbers of the sample.

38. (new) A raw material for producing an artificial corundum crystal which is used to produce an artificial corundum crystal,
wherein the raw material contains a molybdenum compound, an aluminum compound and a coloring component raw material,
wherein the aluminum compound is an aluminum oxide, or a compound which is heated to generate the aluminum oxide,
wherein the coloring component raw material is heated to generate an ion of a coloring component and is an oxide of the coloring component,
wherein an adding amount of the oxide of the coloring component is 1% or less by weight to a weight of the aluminum oxide, and
wherein the coloring component is an iron and a titanium, a nickel, a vanadium, or a cobalt.

39. (new) The raw material for producing an artificial corundum crystal according to claim 38, which contains an alkali metal compound.

40. (new) The raw material for producing an artificial corundum crystal according to claim 38, wherein the molybdenum compound is a molybdenum oxide, or a compound which is heated to generate the molybdenum oxide.

41. (new) The raw material for producing an artificial corundum crystal according to claim 39, wherein the molybdenum compound is a molybdenum oxide, or a compound which is heated to generate the molybdenum oxide.

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42. (new) The raw material for producing an artificial corundum crystal according to claim 39, wherein the alkali metal compound is an alkali metal oxide, or a compound which is heated to generate the alkali metal oxide.